



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

D205-634-041
Job Sheet 169489-A



Tel (613) 632-5200

Part No: D205-634-041 Job Qty: 1 ea
Part Name: Replacement Skidtube with Standard Wearplates Fits LH or RH
Part Weight: 0 lbs Status: Scheduled Priority: High
Job Created: 12/13/17 Job Tracking No:
Due Date: 12/26/17 Created By: Marie Lajeunesse
Type: SOLD Description:
Customer: California Department Of Forestry & Fire Protection (CCAL101)
5500 Price Avenue McClellan, CA, 95652 USA ph:(916) 561-3359
Note: DWG REV H SHEETS 1,2,3,8 IPP Rev:N 02.08.28 FP was QC5 in Step 27; Added QC5 to Step 30 KJ IPP
Rev P 10.02.19 per PAR09-043 EC verified by:DD IPP Rev. O 06.02.28 Added paperwork EC IPP Rev:P 07-
07-09 SS Wearplates & Gaskets JLM IPP Rev:Q 10.12.01 as per chg003 DD ver:EC IPP REV:R 12.01.23 AS
PER ECN11-684 VERF:EC IPP REV:S 17.12.08 REMOVE GASKET AS PER INTUITIVE INFO DD VERF:JFS
Ship Via:

Bill of Materials

Job Routing

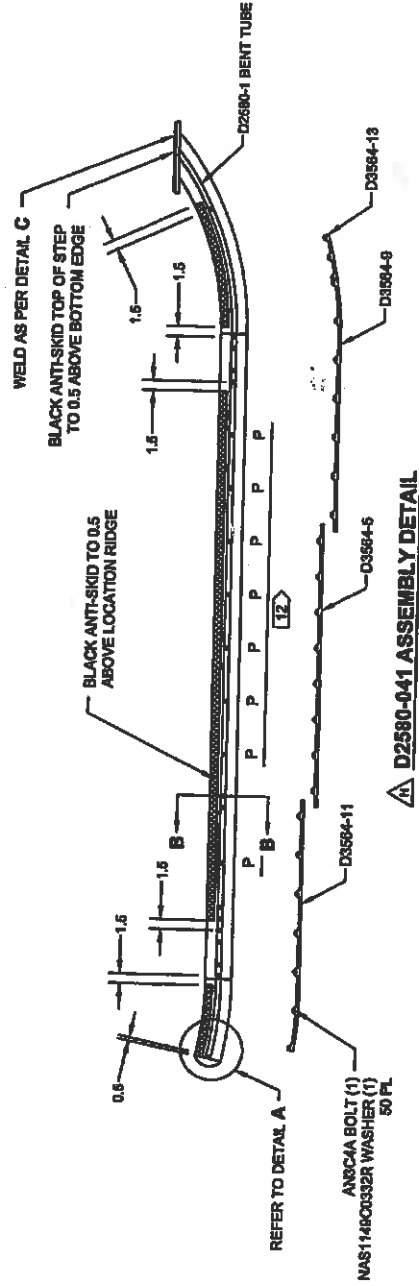
Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup hrs	Run Hrs	Workcenter / Supplier	Lead Time	
90	Start up Operation	1 Ea		12/25/17	0.00	0.00	Start Up Skidtubes		
110	CNC Bend Skidtubes	1 pcs	12/25/17	12/25/17	0.00	0.65	CNC Bend Skidtube		m/g
120	Skidtubes	1 pcs	12/25/17	12/25/17	0.00	2.89	Skidtubes-2		JY
130	QC	1 pcs	12/25/17	12/25/17	0.00	0.00	QC5		BE
140	Skidtubes	1 pcs	12/25/17	12/25/17	0.00	2.89	Skidtubes-2		BE JY
150	QC	1 pcs	12/25/17	12/25/17	0.00	0.00	QC10		PD 17-12-15
160	QC	1 pcs	12/25/17	12/25/17	0.00	0.00	QC5		dx 17-12-20
170	HandFinish	1 pcs	12/25/17	12/25/17	0.00	1.31	HandFinish2		10/17-12-21/25
180	Powdercoat	1 pcs	12/25/17	12/25/17	0.00	0.34	Powdercoat1		RD 17-12-27
190	QC	1 pcs	12/25/17	12/25/17	0.00	0.00	QC3		BE 17-12-27
200	HandFinish	1 pcs	12/26/17	12/26/17	0.00	1.31	HandFinish4		
210	QC	1 pcs	12/26/17	12/26/17	0.00	0.00	QC5		
215	DC	1 pcs	12/26/17	12/26/17	0.00	0.00	DC		
220	Packaging	1 pcs	12/26/17	12/26/17	0.00	0.00	Packaging3-1		
230	QC21-FG	1 Ea	12/26/17	12/26/17	0.00	0.00	QC21		

Part Op 110 - 1-Bend as per program D2580.C on CNC Bender and Folio 16 2-Cut tubes as per Dwg. D2580 3- scribe batch# in
Descriptions: aft end of tube
120 - 1- Deburr ends and remove bending marks 2- Prepare tube for welding as per QSI 004
140 - 1-Weld step D2576 as per Dwg. D2580 and QSI 004 2-Grind welds on step as per Dwg D2580 3- Insert D4202-1
spacer, swage as per QSI002 and trim/ grind flush per QSI002 and dwg. Hold x-bolt with DT9701 Use tube expander 1/2
x17G to start expansion and finish with 1/2 x 18G to achieve dwg dimention. 4-Drill holes for wearplates using DT 8217 &
DT8937, 7.40" from most fwd saddle holes (ref only) Open holes to 19/64", adjust stopper not to hit web.Deburr 6-Drill
pilot holes for aft cap using DT 8215Open holes to 0.208". Deburr 7-Drill pilot holes for Tow ring using DT8091, open
to .640"and Deburr
170 - Re-alodine tube as per QSI 005 section 4.1.2.1 do not acid etch and leave fwd cap out of solution.
180 - START TIME: 1:20 OVEN TEMPERATURE: 520 FINISH TIME: 1:50
200 - 1-Install inserts & wearplates as per Dwg. D2580. Use a drop of Sikaflex on insert holes before installing wearplate
A/R Sikaflex-291 1138654 Sikaflex expire date: 18/04 2-Coat D2594-3 O' rings with Petroleum Jelly and install
D2594-1 plugs as per Dwg D2580 3-Inspect for foreign object per QSI 024 4-Install 2855 Aft Cap as per Dwg D2580 and
seal Fwd Step & Aft Cap with Sikaflex. Clean excess adhesive A/R Sikaflex-291 1138654 Sikaflex expire date:
18/04 5-Wing Walk as per Dwg D2580 and QSI 005 4.4 Batch: 1138711

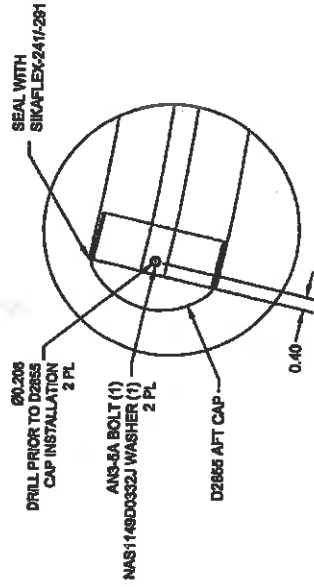
210 - Inspect Aft Cap, Fwd Step and Wing Walk of work to Current Step Inspect for Foreign objects per QSI 024
215 - Photocopy D205-634 bluefile & type labels per PPP D205-634-041 CHG006
220 - Identify and pack for shipping as per PPPD205-634-041 Location: _____ PPP Rev: _____

Job Allocations					
Operation	Component Part	Required	Inventory	Allocated	Std Qty
90-Start up Operation	D2580-1 <i>S012315</i>	1	16	0	0
140-Skidtubes	D2576-3 <i>F151399</i>	1	66	0	0
	D4202-1 <i>1640678</i>	20	879	0	0
200-HandFinish	S027746 ALS7-1032-130 <i>S007279</i>	50	1,947	0	0
	AN3-5A <i>S003184</i>	2	460	0	0
	S027647 AN3C4A <i>S000533</i>	50	2,935	0	0
	S027650 D2594-1 <i>S011147</i>	16	265	0	0
	S027651 D2594-3 <i>F159710</i>	16	282	0	0
	S027652 D2855 <i>F151613</i>	1	84	0	0
	S027653 D3564-11 <i>F165212</i>	1	19	0	0
	S027654 D3564-13 <i>F159900</i>	1	11	0	0
<i>S015902</i>	S027656 D3564-5 <i>F159945</i>	1	18	0	0
	S027657 D3564-9 <i>S023933</i>	1	7	0	0
<i>S027658 FM 138 409 -1</i>	NAS1149C0332R F159945	50	5,304	0	0
	<i>S027659</i> NAS1149D0332J <i>S020606</i>	2	4,023	0	0
Part Specifications					
Specifications could not be found.					

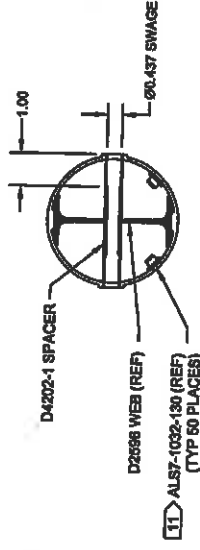
Plex 12/13/17 8:14 AM Dart.lajeunesse.marie



DETAIL A
SCALE 5X

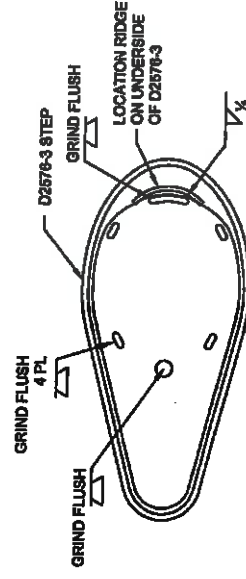


SECTION B-B
SCALE 5X



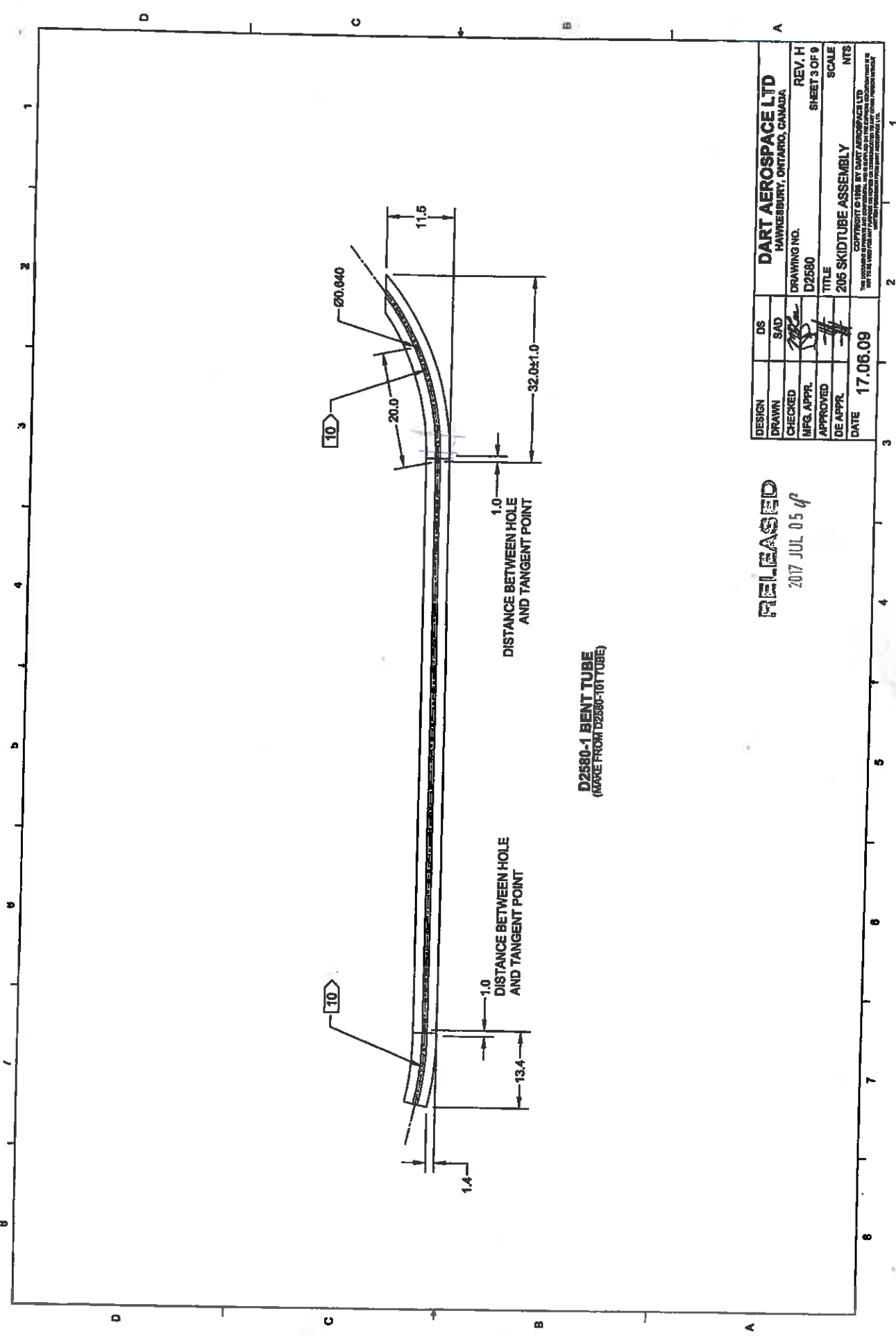
AFTER DRILLING AND BENDING ASSEMBLY
PERFORM THE FOLLOWING FOR Ø0.508 HOLES ONLY:
1. INSERT D4202-1 SPACER (20 PLACES)
2. SWAGE TO Ø0.437 X 1.00 DEEP PER QSI 002
3. TRIM / GRIND FLUSH PER QSI 002

DETAIL C
SCALE 5X



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2017 JUL 05

DESIGN	DS	DART AEROSPACE LTD
DRAWN	SAD	HAWKESBURY, ONTARIO, CANADA
CHECKED		DRAWING NO. D2580
MFG. APPR.		REV. H SHEET 2 OF 9
DE APPR.		TITLE 205 SKIDTUBE ASSEMBLY
DATE	17.06.09	SCALE NTS



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2017 JUL 05 *q*

DESIGN	DS	DART AEROSPACE LTD
DRAWN	SAD	HAWKESBURY, ONTARIO, CANADA
CHECKED	<i>[Signature]</i>	DRAWING NO. D2580
MFG. APPR.	<i>[Signature]</i>	REV. H SHEET 3 OF 9
APPROVED	<i>[Signature]</i>	TITLE 205 SKIDTUBE ASSEMBLY
DE APPR.	<i>[Signature]</i>	SCALE NTS
DATE	17.06.09	NTS

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D2580-045 ASSEMBLY DETAIL

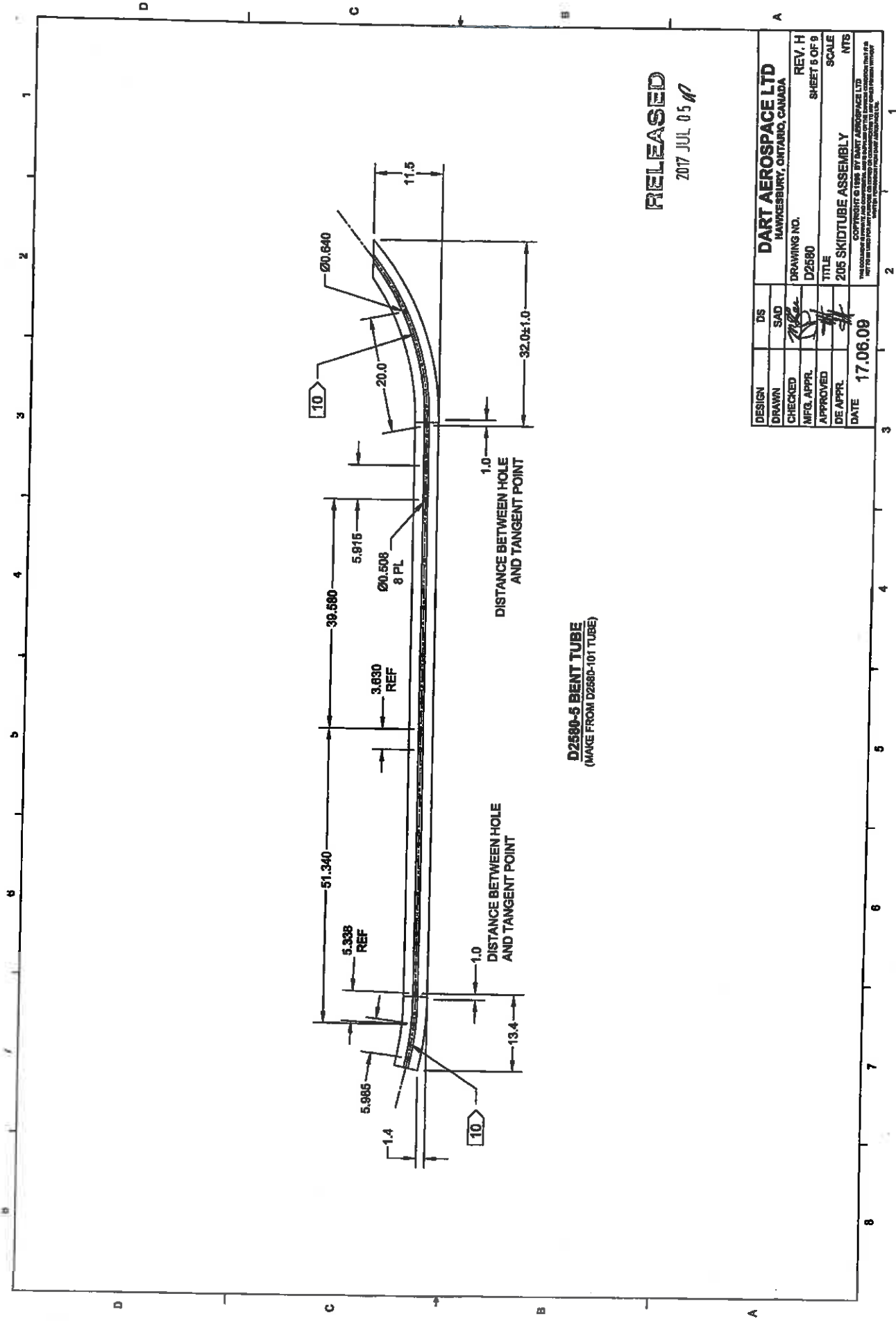


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DRAWING NO. D2580	TITLE 205 SKIDTUBE ASSEMBLY
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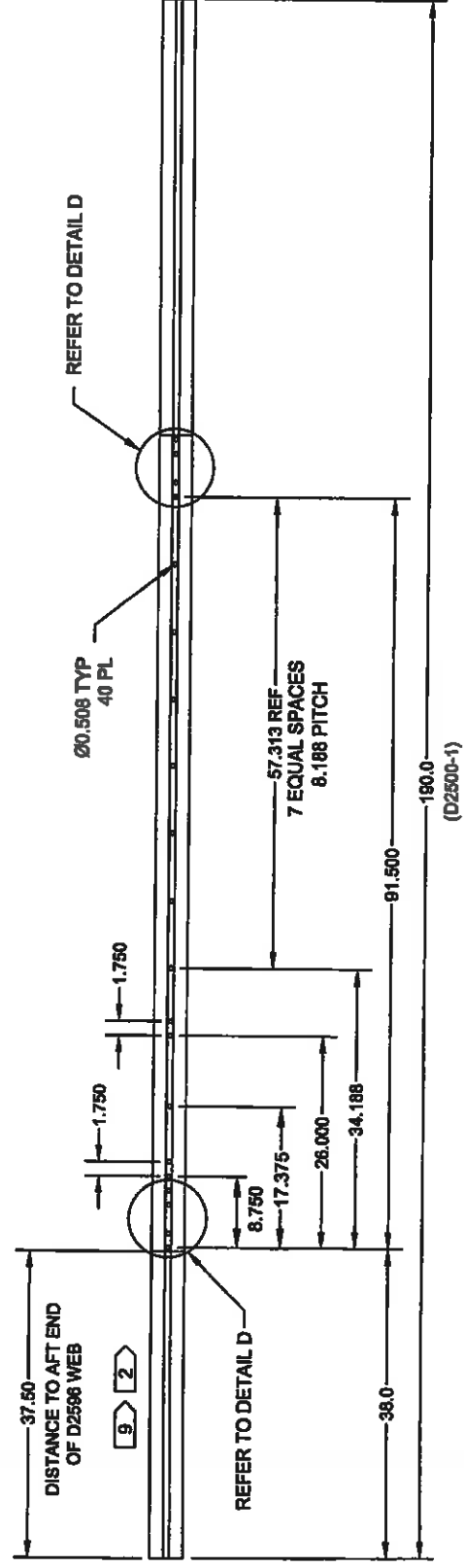


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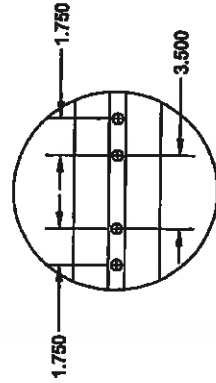
D2580-5 BENT TUBE
(MAKE FROM D2580-101 TUBE)

DESIGN	DS	SAD	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA
DRAWN			
CHECKED			
MFG. APPR.			DRAWING NO. D2580
APPROVED			REV. H SHEET 6 OF 9
DE APPR.			TITLE 206 SKIDTUBE ASSEMBLY
DATE	17.06.09		SCALE NTS

COMPANY & TRADE
DART AEROSPACE LTD
HAWKESBURY, ONTARIO, CANADA
1000 DART AEROSPACE LTD
HAWKESBURY, ONTARIO, CANADA
HAWKESBURY, ONTARIO, CANADA



D2580-101 TUBE



DETAIL D
SCALE 5X

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2017 JUL 05

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CHECKED		DRAWING NO. REV. H
MFG. APPR.		D2580 SHEET 9 OF 9
APPROVED		TITLE
DIE APPR.		205 SKIDTUBE ASSEMBLY
DATE	17.06.09	SCALE NTS

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DQA: _____ Date: _____

QA Closed: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

Work Order update only ☐



Work Order: <u>169489-A</u>		DISPOSITION				AGAINST DEPARTMENT/PROCESS							
Part No. <u>0805-634041</u>		Rework ☐ Scrap ☐ Use-as-is ☒				Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐				Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐			
NCR No. <u>19-7355</u>		Suspected Unapproved ☐				Skid-tube ☒ Machining ☐ Thermoforming ☐ Large Fab ☐				Engineering ☐ Quality ☐ Other ☐			
Date: <u>17/12/13</u>		Step #: _____		QTY Effective: _____		MRR (QS1042) Approval DAS 12 17/12/13 9-89 17/12/13							
Description Work Order Deviation						Disposition							
<u>Tube is bent long > 32.25" long</u>						<u>Acceptable Cosmetic.</u>							
Root Cause						FAULT CATEGORY							
Environment ☐		No Re-verification ☐		Pressure/Forced ☐		Temperature/Cure ☐		Power Loss/Surge ☐		Positioned Wrong ☐			
Design ☐		Operator ☐		Bending ☒		Set-up ☐		Folio/Program ☐		Outside Dimensions ☐			
Doc/Data ☐		Offset/Setup ☐		Centre Not Concentric ☐		BOM/Route ☐		Grain ☐		Over/Under tolerance ☐			
Equip/Tooling ☐		Supplier ☐		Cracks ☐		Broken/Damage/Defect ☐		Weld ☐		Part Incorrect ☐			
Handling/Pre ☐		Training ☐		Crimp/Kink/Ripple/Wave ☐		Inspection Incomplete/Unqualified ☐		Wrong Stock Pulled ☐		Part Lost/Missing ☐			
Material ☒		Use for Testing ☐		Cuffs ☐		Contamination ☐		Out of Sequence ☐		Part Moved ☐			
Internal Transport ☐		Poor Information ☐		Crushing ☐		Countersink ☐		Off-set ☐		Drawing ☐			
Tribal Knowledge ☐		Rushing ☐		Heat Treat ☐		Cut Too Short ☐		Mislabeled ☐		Finish ☐			
LOA ☐		Product Improvement ☐		Wave/Twist in Tube ☐		Instructions Incomplete/Unclear ☐		Fit/Function ☐		Misread ☐			
Substation ☐		Process Improvement ☐		Marks/Chatter ☐		Drill Holes ☐		Misaligned/off center ☐		Turning Sequence ☐			
Past Expiry Date ☐		Manufacturing Process ☐		OTHER: _____									
Misidentified ☐		Past Due ☐											

H:/FORMS/Quality Assurance\approved QA/NCRWO Rev I

PAGE 1 OF 1

Part Number: D205-634-041/-041DG/-041GY

Description: REPLACEMENT SKIDTUBE w/ STANDARD WEARPLATES, LH/RH

[illegible]